

Biological Analysis Report

NE-DIST-2018-03-01-01

Florida Department of Environmental Protection
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DOH Accreditation E31780

Overflow Analyses Performed By:
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DOH Accreditation E82001

Event Description: **Gville_2018**
Request ID: **RQ-2018-02-26-23**
Customer: **NE-DIST**
Project ID: **SMP**

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Date Certified: 01-MAY-2018 14:54



Case Narrative

Unless otherwise noted, all samples included in this report were received in accordance with protocols referenced in Chapter 62-160, Florida Administrative Code (F.A.C.). Results published in this report pertain only to the samples as submitted to, and received by the laboratory. All times in this report are adjusted to the applicable Eastern Time Zone (EST or EDT).

Results for the following analytical groups are included in this report: Chlorophyll/Grain Size/BOD, Molecular and Overflow.

Scientific notation may be used in reporting very large or small values. Values reported using scientific notation will take the form of the following example: 1.3E+03, which is equivalent to 1.3×10^3 or 1300.

Unless otherwise noted, analytical values for soil and sediment samples are reported on a dry weight basis, and analytical values for waste and tissue samples are reported on a wet weight basis.

Results for TNI accredited tests met requirements established by The NELAC Institute. A double asterisk (**) is used to indicate an analyte/matrix/method for which the laboratory is not TNI accredited or where accreditation for that field of testing is not applicable.

Any significant anomalies or deviations from established protocols are documented in Non-Conformance Reports, which, where appropriate, are included within this analytical report. Additional comments related to specific analytical tests may be included as remarks following the analytical results for each sample. Such comments and remarks are for informational purposes only and are not intended to convey judgement about the usability of the reported data.

A quality control report on the performance of the test method for the submitted samples is included. Uncertainty associated with the analytical results contained in this report can be estimated from the reported quality assurance results and from published quality control acceptance limits for each analytical test. Matrix quality control results (matrix spike recoveries and matrix sample precision) pertain only to the matrix sample tested and do not necessarily reflect test method performance for other samples.

Typical matrix quality control (QC) measurements may include matrix spike recovery, matrix spike duplicate recovery, matrix spike precision and matrix sample precision. Not all matrix QC results may be available or reportable; where they are not an explanation is provided. Typical reasons for unavailable QC results include, but are not limited to, a) insufficient matrix sample to perform some or all QC measurements; b) analyte concentration in the sample replicated was too low for a meaningful measurement of precision and c) analyte concentration in the matrix sample spiked was too high (relative to the amount of analyte spiked) for a meaningful measurement of recovery. Where matrix QC results are unavailable, other method performance metrics (e.g., LCS recovery, LCS precision, surrogate recovery) may be used to assess performance of the method. Comments explaining any missing QC measurements are not intended to convey any adverse conclusions about the quality of the reported data.

Precision is reported as relative percent difference unless otherwise noted.

Quality Control codes as defined below may be used in this report to indicate results that are associated with one or more quality control elements which did not fall within established test method criteria. Such results may be qualified as estimates using a J qualifier as required by 62-160 F.A.C. Explanations are included in the report for any results that were reported as estimates for other reasons.

QC Codes used in this report may include:

- LCS – Recovery for the batch Laboratory Control Sample (LCS) was outside existing control limits;
- MS – Recovery for the batch matrix spike (MS) was outside existing control limits;
- CCV – Recovery for a continuing calibration verification (CCV) standard was outside existing control limits;
- SUR – Recovery of a surrogate (SUR) for associated analytes was outside existing control limits;
- RPD – The precision, measured as relative percent difference (RPD), of batch replicate measurements was outside existing control limits;
- RSD – The precision, measured as relative standard deviation (RSD), of batch replicate measurements was outside existing control limits;
- SMP – Sample - used precision derived from replicate analyses of a sample;

The following data qualifiers are used, where applicable, in this report as specified in 62-160 F.A.C.

- A - Value reported is the mean of two or more determinations.
- B - Results based on colony counts outside the acceptable range.
- I - The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.
- J - Estimated value and/or the analysis did not meet established quality control criteria.
- K - Actual value is known to be less than value given.
- L - Actual value is known to be greater than value given.
- N - Presumptive evidence of presence of material.
- O - Sampled, but analysis lost or not performed.
- Q - Sample held beyond normal holding time.
- T - Value reported is less than the criterion of detection.
- U - Material was analyzed for but not detected. The reported value is the method detection limit for the sample analyzed.
- V - Analyte was detected in both sample and method blank.
- X - Too few individuals to calculate SCI value.
- Y - The laboratory analysis was from an unpreserved or improperly preserved sample. The data may not be accurate.
- Z - Colonies were too numerous to count (TNTC).

Quality control information from overflow laboratories may not be included in this report. Please refer to the associated report from the overflow laboratory for additional information.

Sample Location: Montechoa Cr @ Cr 340 (NE 153th Ave)

Collection Date/Time: 02/28/2018 09:55

Field ID: 21030112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970991	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P341110	
		Phaeophytin-a	0.90	I	ug/L	P341110	
		Chlorophyll-a, Uncorrected	1.0	I	ug/L	P341110	

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: Montechoa Cr @ Cr 340 (NE 153th Ave)

Collection Date/Time: 02/28/2018 09:55

Field ID: 21030112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971006	EPA 1603	Escherichia coli-Membrane Filter	130	B	cfu/100 mL		

Sample Location: Montechoa Cr @ Cr 340 (NE 153th Ave)

Collection Date/Time: 02/28/2018 09:55

Field ID: 21030112

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971016	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P340649	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Ref. Method and Comment:

SOP-PCR-1.0: No amplification of HF183 marker.

Sample Location: Little Hatchett CR @ SR 24

Collection Date/Time: 02/28/2018 10:20

Field ID: 20020109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971007	EPA 1603	Escherichia coli-Membrane Filter	1200	B	cfu/100 mL		

Sample Location: Little Hatchett CR @ SR 24

Collection Date/Time: 02/28/2018 10:20

Field ID: 20020109

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971017	SOP-PCR-1.0	HF183-qPCR**	110	T	GEU/100 mL	P341092	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Sample Location: Lake Forest Creek @ University Ave

Collection Date/Time: 02/28/2018 11:20

Field ID: 20020124

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971013	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: Lake Forest Creek @ University Ave

Collection Date/Time: 02/28/2018 11:20

Field ID: 20020124

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971008	EPA 1603	Escherichia coli-Membrane Filter	20	B	cfu/100 mL		

Sample Location: Blues Creek at NW 71st Street, Gainesville

Collection Date/Time: 02/28/2018 12:45

Field ID: 21030089

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970992	SM 10200 H (mod.)	Chlorophyll-a, Corrected	0.55	U	ug/L	P341110	
		Phaeophytin-a	0.40	U	ug/L	P341110	
		Chlorophyll-a, Uncorrected	0.46	I	ug/L	P341110	

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: Blues Creek at NW 71st Street, Gainesville

Collection Date/Time: 02/28/2018 12:45

Field ID: 21030089

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971014	SOP-PCR-4.0	HF183 - Human Source Marker**	Below Threshold				

Sample Location: Blues Creek at NW 71st Street, Gainesville

Collection Date/Time: 02/28/2018 12:45

Field ID: 21030089

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971009	EPA 1603	Escherichia coli-Membrane Filter	340		cfu/100 mL		

Sample Location: Calf Pond - Center

Collection Date/Time: 02/28/2018 11:00

Field ID: G1NE0862

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970993	SM 10200 H (mod.)	Chlorophyll-a, Corrected	20		ug/L	P341110	
		Phaeophytin-a	1.9		ug/L	P341110	
		Chlorophyll-a, Uncorrected	22		ug/L	P341110	

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: Calf Pond - Center

Collection Date/Time: 02/28/2018 11:00

Field ID: G1NE0862

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971010	EPA 1603	Escherichia coli-Membrane Filter	10	U	cfu/100 mL		

Sample Location: Lake Alice Center

Collection Date/Time: 02/28/2018 14:00

Field ID: 20020052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970994	SM 10200 H (mod.)	Chlorophyll-a, Corrected	5.9		ug/L	P341110	
		Phaeophytin-a	0.74	I	ug/L	P341110	
		Chlorophyll-a, Uncorrected	6.6		ug/L	P341110	

Ref. Method and Comment:

SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: Lake Alice Center

Collection Date/Time: 02/28/2018 14:00

Field ID: 20020052

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971011	EPA 1603	Escherichia coli-Membrane Filter	20	B	cfu/100 mL		

Sample Location: Lake Alice Outlet @ Gale Lemeran Rd.

Collection Date/Time: 02/28/2018 14:20

Field ID: G3NE0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1970995	SM 10200 H (mod.)	Chlorophyll-a, Corrected	16		ug/L	P341110	
		Phaeophytin-a	2.7		ug/L	P341110	
		Chlorophyll-a, Uncorrected	18		ug/L	P341110	

Ref. Method and Comment:
 SM 10200 H (mod.): Precision data is not available for at least one component due to the small amount of analyte in the QC sample. Refer to QA report for available precision data.

Sample Location: Lake Alice Outlet @ Gale Lemeran Rd.

Collection Date/Time: 02/28/2018 14:20

Field ID: G3NE0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971015	SOP-PCR-1.0	HF183-qPCR**	140	U	GEU/100 mL	P341663	
	SOP-PCR-1.4	BacR-qPCR**	620	T	TSC/100 mL	P341663	
	SOP-PCR-4.0	HF183 - Human Source Marker**	Above Threshold				

Ref. Method and Comment:
 SOP-PCR-1.0: No amplification of HF183 marker.

Sample Location: Lake Alice Outlet @ Gale Lemeran Rd.

Collection Date/Time: 02/28/2018 14:20

Field ID: G3NE0010

Matrix: W-SURF-FRH

Sample ID	Ref. Method	Component	Result	Code	Units	Batch ID	QC Codes
1971012	EPA 1603	Escherichia coli-Membrane Filter	2900		cfu/100 mL		

Quality Assurance Report Method Blank Results

Reference Method: SM 10200 H (mod.)
 Batch ID: P341110

Component	Result	Code	Units
Chlorophyll-a, Corrected	0.55	U	ug/L
Chlorophyll-a, Uncorrected	0.40	U	ug/L
Phaeophytin-a	0.40	U	ug/L

Reference Method: SOP-PCR-1.0
 Batch ID: P340649

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Reference Method: SOP-PCR-1.0
 Batch ID: P341092

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Quality Assurance Report Method Blank Results

Reference Method: SOP-PCR-1.0
Batch ID: P341663

Component	Result	Code	Units
HF183-qPCR	280	U	GEU/100 mL

Reference Method: SOP-PCR-1.4
Batch ID: P341663

Component	Result	Code	Units
BacR-qPCR	3.0E+03	U	TSC/100 mL

Quality Assurance Report Laboratory Control Sample Accuracy

Reference Method: SM 10200 H (mod.)
Batch ID: P341110

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
Chlorophyll-a, Corrected	101		P	84 - 116

Reference Method: SOP-PCR-1.0
Batch ID: P340649

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	117	86.1	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P341092

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	128	95.1	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P341663

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
HF183-qPCR	124	91.9	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P341663

Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
BacR-qPCR	83.2	66.1	P/P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P340649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1964973	HF183-qPCR	74.0		P	50 - 175
1964974	HF183-qPCR	84.2		P	50 - 175
1965458	HF183-qPCR	91.9		P	50 - 175

Quality Assurance Report Matrix Spike Accuracy

Reference Method: SOP-PCR-1.0
Batch ID: P340649

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1965459	HF183-qPCR	70.6		P	50 - 175
1965461	HF183-qPCR	83.3		P	50 - 175
1966060	HF183-qPCR	67.1		P	50 - 175
1966063	HF183-qPCR	68.5		P	50 - 175
1966064	HF183-qPCR	72.6		P	50 - 175
1966327	HF183-qPCR	93.3		P	50 - 175
1971016	HF183-qPCR	87.0	81.6	P/P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P341092

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1969246	HF183-qPCR	76.0		P	50 - 175
1969248	HF183-qPCR	98.2		P	50 - 175
1969853	HF183-qPCR	102		P	50 - 175
1970980	HF183-qPCR	92.3		P	50 - 175
1971017	HF183-qPCR	81.1		P	50 - 175
1974797	HF183-qPCR	95.2	96.0	P/P	50 - 175
1974798	HF183-qPCR	85.8		P	50 - 175
1974799	HF183-qPCR	94.7		P	50 - 175
1974800	HF183-qPCR	102		P	50 - 175

Reference Method: SOP-PCR-1.0
Batch ID: P341663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1969180	HF183-qPCR	103		P	50 - 175
1969348	HF183-qPCR	96.5		P	50 - 175
1969655	HF183-qPCR	98.3		P	50 - 175
1970727	HF183-qPCR	93.5		P	50 - 175
1970728	HF183-qPCR	106		P	50 - 175
1970729	HF183-qPCR	134		P	50 - 175
1970730	HF183-qPCR	110		P	50 - 175
1970855	HF183-qPCR	81.9		P	50 - 175
1970889	HF183-qPCR	94.7		P	50 - 175
1970891	HF183-qPCR	87.0		P	50 - 175
1970975	HF183-qPCR	99.2		P	50 - 175
1971015	HF183-qPCR	95.2		P	50 - 175
1976478	HF183-qPCR	89.9	92.4	P/P	50 - 175

Reference Method: SOP-PCR-1.4
Batch ID: P341663

Spiked Sample	Component	% Rec.1	% Rec.2	Pass/Fail	Control Limits
1969180	BacR-qPCR	63.3		P	50 - 175
1969348	BacR-qPCR	66.0		P	50 - 175
1970891	BacR-qPCR	59.5		P	50 - 175
1971015	BacR-qPCR	60.2		P	50 - 175

Quality Assurance Report Precision

Quality Assurance Report Precision

Reference Method: SM 10200 H (mod.)
Batch ID: P341110

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971115	Chlorophyll-a, Corrected	9.48	Sample	P	0 - 25
1971115	Chlorophyll-a, Uncorrected	10.8	Sample	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P340649

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1971016	HF183-qPCR	6.39	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P341092

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1974797	HF183-qPCR	0.805	Spike	P	0 - 25

Reference Method: SOP-PCR-1.0
Batch ID: P341663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976478	HF183-qPCR	2.76	Spike	P	0 - 25

Reference Method: SOP-PCR-1.4
Batch ID: P341663

Replicated Lab Sample	Component	% RSD/RPD	Sample/Spike/LCS*	Pass/Fail	Control Limits
1976478	BacR-qPCR	3.48	Spike	P	0 - 25

* Sample, spike and/or laboratory control sample precision (LCS) is reported.
Replicate spike precision may be reported when sample results are below quantifiable levels.

Quality Assurance Report Surrogates

Lab Sample ID: 1971015
Field Sample ID: G3NE0010

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	93.7	P	50 - 300
SOP-PCR-1.4	SKETA-qPCR	85.1	P	50 - 300

Lab Sample ID: 1971016
Field Sample ID: 21030112

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	111	P	50 - 300

Quality Assurance Report Surrogates

Lab Sample ID: 1971017
 Field Sample ID: 20020109

Reference Method	Surrogate	% Rec.	Pass/Fail	Control Limits
SOP-PCR-1.0	SKETA-qPCR	63.0	P	50 - 300

Quality Assurance Report Summary

Ref. Method	Analyte	LCS % Recovery		MS % Recovery			Precision SMP	MS
SM 10200 H (mod.)	Chlorophyll-a, Corrected	101					9.48	
	Chlorophyll-a, Uncorrected						10.8	
SOP-PCR-1.0	HF183-qPCR	86.1	117	91.9	70.6	83.3		6.39
				67.1				
	HF183-qPCR	95.1	128	81.1	76.0	98.2		0.805
SOP-PCR-1.4	HF183-qPCR	91.9	124	103	96.5	98.3		2.76
				93.5				
	BacR-qPCR	66.1	83.2	63.3	66.0	60.2		3.48
				59.5				

Reference Method Descriptions

Method / DoH Cert #	Description	Associated Samples
EPA 1603 / E82001	Escherichia coli by membrane filter method using modified mTEC by Advanced Environmental Gainesville Overflow Laboratories for NED	1971006, 1971007, 1971008, 1971009, 1971010, 1971011, 1971012
SM 10200 H (mod.) / E31780	Phytoplankton chlorophyll-a corrected, uncorrected, and phaeophytin by spectrophotometry	1970991, 1970992, 1970993, 1970994, 1970995
SOP-PCR-1.0 / E31780	Detection and quantification of human-specific HF183 Bacteroides genetic marker with quantitative polymerase chain reaction	1971015, 1971016, 1971017
SOP-PCR-1.4 / E31780	Detection and quantification of Ruminant specific Bacteroidetes BacR genetic marker with quantitative polymerase chain reaction	1971015
SOP-PCR-4.0 / E31780	Preparation of Samples by Filtration and held for qPCR Analysis	1971013, 1971014, 1971015, 1971016, 1971017

Preparation and Analysis Log

Ref. Method	Received Date	Prep Date/Time	Prepared By	Analysis Date/Time	Analyzed By	Associated Samples
EPA 1603	02/28/2018	02/28/2018 16:45		03/01/2018 18:12	AEL - Gainesville	1971006, 1971007, 1971008, 1971009, 1971010, 1971011, 1971012
SM 10200 H (mod.)	03/01/2018	03/01/2018 13:18	Cathy Sherrer	03/07/2018 07:45	Kim M. Spencer	1970991, 1970992, 1970993, 1970994, 1970995
SOP-PCR-1.0	03/01/2018	03/01/2018 13:20	Puja Jasrotia	03/08/2018 14:55	Sarah Menz	1971016
	03/01/2018	03/01/2018 13:20	Puja Jasrotia	03/26/2018 11:00	Sarah Menz	1971015
	03/01/2018	03/01/2018 13:20	Sarah Menz	03/15/2018 15:43	Sarah Menz	1971017
SOP-PCR-1.4	03/01/2018	03/01/2018 13:20	Puja Jasrotia	03/26/2018 15:33	Sarah Menz	1971015
SOP-PCR-4.0	03/01/2018	03/01/2018 13:20	Angela Smith	03/19/2018 10:32	Puja Jasrotia	1971013, 1971014, 1971015, 1971016, 1971017